OIPE JC34
APR 05 2004
PATENT & TRADEMARK OFFICE

Process Flow

Prepare glass plates
- -cut glass plates to size (top plate larger than bottom in both directions)
- -edge glass to increase strength
- -drill hole in bottom plate for evacuation port

Fabricate bottom fiber preform
- -Make opal glass blanks
- -Extrude blank to form preform

↓

Draw bottom fiber onto rotating drum
- -Load preform into draw
- -Place wires through holes in preforms
- -Prepare drum
- -Draw fiber containing wire onto drum channel out
- -Repeat process to form 3 drums with bottom fiber

↓

Coat each individual drum with RGB phosphors
- -Spray coat fiber channels on drum with phosphor
- -Scrap phosphor off barrier ribs with knife edge
- -Repeat for each 3 color (red, green & blue)

↓

Rewind 3 color fibers onto single drum
- -Prepare take-up drum (metal bars in grooves)
- -Sequentially rewind 3 color phosphor coated fibers onto a single drum in RGB fashion

↓

Form sheets of bottom fibers
- -Clamp metal bars over first set
- -Cut fibers between sets of metal bars
- -Remove fibers from drum as sheet

Fabricate top fiber preform
- -Make high dielectric glass blanks
- -Extrude blank to form preform

↓

Draw top fiber onto rotating drum
- -Load preform into draw
- -Place wires through holes in preform
- -Prepare drum (metal bars in groove)
- -Draw fiber containing wire onto drum plasma surface facing outward

↓

Coat fiber with MgO
- -Spray coat fibers with MgO

↓

↓

↓

Form sheets of top fiber
- -Clamp metal bars over first set
- -Cut fibers between sets of metal bars
- -Remove fibers from drum as sheet

Assemble Panel
- -Place top fibers array onto top plate
- -Place bottom fiber array onto top fiber array orthogonal to it
- -Place bottom place over fiber arrays

Remove glass fiber from wire electrodes around perimeter of panel
Clamp frit containing glass tabs around perimeter of panel
Apply evacuation tube and clamp frit containing washer around tube
Place in furnace and frit seal the display
Evacuate, back fill and seal off tube
Connect wires to electronics

Figure 25